CLAIMS

1. A non-aqueous electrolyte secondary battery comprising: a positive electrode comprising a compound oxide containing lithium; a negative electrode comprising a carbon material; a separator interposed between said positive electrode and said negative electrode; and a non-aqueous electrolyte comprising a non-aqueous solvent and $LiPF_6$ dissolved therein,

wherein said negative electrode contains 0.6 to 1.7 parts by weight of a particulate modified styrene-butadiene rubber and 0.7 to 1.2 parts by weight of a thickening agent per 100 parts by weight of said carbon material where the total amount of said particulate modified styrene-butadiene rubber and said thickening agent is 1.3 to 2.4 parts by weight per 100 parts by weight of said carbon material,

and the concentration of $LiPF_6$ in said non-aqueous electrolyte is 0.6 to 1.05 mole/liter.

2. The non-aqueous electrolyte secondary battery in accordance with claim 1, wherein said particulate modified styrene-butadiene rubber contains a copolymer comprising an acrylonitrile unit, a styrene unit, and a butadiene unit.

3. The non-aqueous electrolyte secondary battery in accordance with claim 2, wherein said copolymer is in a form of a core-shell type particle.

4. The non-aqueous electrolyte secondary battery in accordance with claim 3, wherein, in a FT-IR absorption spectrum of said copolymer, the intensity of the absorption

peak attributed to C≡N stretching vibration in said acrylonitrile unit is 0.1 to 2 times the intensity of the absorption peak attributed to C=C stretching vibration in said butadiene unit.

5. The non-aqueous electrolyte secondary battery in accordance with claim 1, wherein the mean particle size of said particulate modified styrene-butadiene rubber is 0.05 to 0.4μm.

6. The non-aqueous electrolyte secondary battery in accordance with claim 1, wherein said thickening agent is carboxymethyl cellulose.

7. The non-aqueous electrolyte secondary battery in accordance with claim 1, wherein the concentration of $LiPF_6$ in said non-aqueous electrolyte is 0.7 to 0.9 mole/liter.

8. The non-aqueous electrolyte secondary battery in accordance with claim 1, wherein said positive electrode contains 0.4 to 2 parts by weight of a particulate modified acrylic rubber per 100 parts by weight of said compound oxide, and said particulate modified acrylic rubber contains a copolymer comprising a 2-ethylhexylacrylate unit, an acrylic acid unit, and an acrylonitrile unit.

9. The non-aqueous electrolyte secondary battery in accordance with claim 8, wherein, in a FT-IR absorption spectrum of said copolymer, the intensity of the absorption peak attributed to C=O stretching vibration in said 2-ethylhexylacrylate unit and said acrylic acid unit is 3 to 50 times the intensity of the absorption peak attributed to C≡N stretching vibration in said acrylonitrile unit.

10. A negative electrode for a non-aqueous electrolyte secondary battery comprising: a carbon material as an active material; 0.6 to 1.7 parts by weight of a particulate modified styrene-butadiene rubber as a binder per 100 parts by weight of said carbon material; and 0.7 to 1.2 parts by weight of thickening agent per 100 parts by weight of said carbon material,

wherein the total amount of said particulate modified styrene-butadiene rubber and said thickening agent is 1.3 to 2.4 parts by weight per 100 parts by weight of said carbon material.

11. The negative electrode in accordance with claim 10, wherein said particulate modified styrene-butadiene rubber contains a copolymer comprising an acrylonitrile unit, a styrene unit, and a butadiene unit.

12. The negative electrode in accordance with claim 11, wherein said copolymer is in a form of a core-shell type particle.

13. The negative electrode in accordance with claim 12, wherein, in a FT-IR absorption spectrum of said copolymer, the intensity of the absorption peak attributed to C≡N stretching vibration in said acrylonitrile unit is 0.1 to 2 times the intensity of the absorption peak attributed to C=C stretching vibration in said butadiene unit.

14. A negative electrode for a non-aqueous electrolyte secondary battery comprising: a carbon material as an active material; and a particulate modified styrene-butadiene rubber as a binder; wherein the surface area of

said carbon material is 300 to 600 m^2 per 1 gram of said particulate modified styrene-butadiene rubber.

15. The negative electrode in accordance with claim 14, wherein said particulate modified styrene-butadiene rubber contains a copolymer comprising an acrylonitrile unit, a styrene unit, and a butadiene unit.

16. The negative electrode in accordance with claim 15, wherein said copolymer is in a form of a core-shell type particle.

17. The negative electrode in accordance with claim 16, wherein, in a FT-IR absorption spectrum of said copolymer, the intensity of the absorption peak attributed to C≡N stretching vibration in said acrylonitrile unit is 0.1 to 2 times the intensity of the absorption peak attributed to C=C stretching vibration in said butadiene unit.